fectious diarrhea and the influenzalike illnesses. During mass gatherings, such as international sports events or political conferences, we should enhance this system.

Planning Syndromic Surveillance for the Athens 2004 Olympic Games: a Pilot Study

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As part of the preparation for the epidemiological surveillance during the 2004 Olympics, a pilot study was conducted during July and August 2002 to assess the feasibility and value of a syndromic surveillance network in the Greek health care system environment. The points of data collection were the emergency departments (EDs) of 14 hospitals in the greater Athens metropolitan area, 3 more cities hosting Olympic games, as well as one major primary health care facility close to Athens and the Olympic athletic facilities. The Hellenic Center for Infectious Disease Control (HCIDC) staff visited participating sites daily to review chief complaints and preliminary diagnoses recorded in ED books and to collect information on a specially designed form for ED encounters representing 1 of 12 public health syndromes of interest. All data from the facilities were faxed to the HCIDC Office of Olympic Games and an analysis report was produced daily. HCIDC staff, in collaboration with infection control nurses, conducted follow-up investigations on a number of cases for verification of condition. The syndromic surveillance network was well accepted in the participating facilities, and expanding it to cover all major public hospitals of the Athens metropolitan area and other cities is deemed feasible. This will require custom-designed procedures for data collection for each health care facility, as well as additional training of ED personnel. The system is currently being evaluated regarding sensitivity and specificity and is expected to be fully operational at least 6 months before the 2004 Olympics.

Syndromic Surveillance: an Applied Tool for Monitoring Health Effects of Colorado Wildfires, Summer 2002

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Summer fires near Denver, Colorado, caused significant pollution, but were they associated with appreciable change in health care utilization (HCU)? Would a syndromic surveillance system detect an HCU change during the 26 days until fire containment? HCU for Denver Health (DH), an integrated safety net hospital serving 150,000 citizens, was compared for 2002 ("later") to the preceding 4 years (1998–2001, the "earlier" period). Chief complaint data for patients presenting to the ED and *International Classification of Diseases, 9th Revision* (*ICD-9*)–coded diagnoses for encounters to 3 urgent/emergent care (UC) and 23 outpatient (OP) facilities were analyzed. Daily visit rates (per 100 visits) for chief complaints (i.e., cough, shortness of breath, and breathing difficulties [RESP] and "asthma") and *ICD-9*–coded asthma visits were calculated and compared using a t test and cumulative sums (CUSUM). Mean daily ED visits were 179 versus 168 (earlier vs. later, respectively). ED chief complaint rates were 0.030 versus 0.042 (RESP, $P < .001$) and 0.013 versus 0.010 ("asthma", $P = .13$) for the earlier versus later periods, respectively. Mean daily *ICD-9*–coded visits were 281 versus 283 (UC) and 1,410 versus 1,383 (OP) earlier versus later periods, respectively. Asthma visit rates were 1.31 versus 1.01 (UC, $P = .04$) and 0.57 versus 0.44 (OP, $P = .11$),

earlier versus later, respectively. No significant deviations were observed using CUSUM methods. We found higher ED-based respiratory-related chief complaints rates during a time of intense forest fire activity near Denver. UC visit rates for asthma were decreased compared to the prior period. Public health information alerts may have played a role in decreasing exposure and avoiding increased HCU.

Milwaukee Biosurveillance Project: Real-Time Syndromic Surveillance Using Secure Regional Internet

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Milwaukee, Wisconsin, was visited by 1.2 million people for events, including the All Star baseball game, in July 2002. Eight emergency departments (EDs), four primary/urgent care practices, and one medical examiner reported, using existing personnel, syndromes associated with bioterrorism agents to the Milwaukee Health Department daily for 4 weeks. Clinicians were to complete a brief symptom checklist during each patient encounter. In practice, some EDs screened only selected patients, and many supplemented clinician reports with log reviews. Daily ED syndrome and total visit volume reports were collected and displayed using the EMSystem secure Web site. Patient-identifying information was not sent to the Milwaukee Health Department, but was retained at the ED in case needed. Participating EDs were visited by 26,888 patients, and 314 patients were reported to meet syndrome criteria over the 4 weeks. The rate of syndrome cases to total visits ranged from 0.04% to 2.8% across the various EDs; EDs that relied exclusively on physician checklists had lower syndrome-to-visit rates. Mean ED administrator ratings of implementation and reporting ease ranged from neutral to modestly positive. They negatively rated the ease of clinician involvement. Mean clinician ratings of their experience were neutral to modestly negative. Estimated added patient time in ED averaged less than 4 minutes. Estimated total additional staff time per patient approximated 10 minutes. Primary care practices reported a higher syndrome rate (8.8% of 2,442 visits), which included a camp-associated cluster of streptococcal pharyngitis. A Web-mounted "dashboard" facilitated comparison of syndrome rates and other surveillance trends. The Web site facilitated collection, analysis, and display of surveillance information.

SECTION III: DATA TRANSFER AND TRANSFORMATION

The Frontlines of Medicine Project: a Proposal for the Standardized Communication of Emergency Department Data for Public Health Uses Including Syndromic Surveillance for Biological and Chemical Terrorism

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